

Natural in Batch under OS/390

This document contains special considerations that refer to Natural in batch under the operating system OS/390.

The following topics are covered:

- General Information about the Natural OS/390 Batch Interface
- Natural OS/390 Generation Parameters
- Datasets Used by Natural under OS/390 Batch

For considerations that refer to Natural in batch generally, see also:

- Adabas Datasets
- Sort Datasets
- Subtasking Session Support for Batch Environments

Natural in Batch Mode - Other Topics:

Natural in Batch Mode (all platforms) | Natural in Batch under VSE/ESA | Natural in Batch under CMS | Natural in Batch under BS2000/OSD

General Information about the Natural OS/390 Batch Interface

The Natural OS/390 batch interface (NATOS) consists of a number of service routines interfacing with the OS/390 operating system.

NATOS is supplied as a source module and can be customized to meet your requirements; see also Installing Natural under OS/390 (described in the Natural Installation Guide for Mainframes). You can either assemble and link NATOS to the Natural nucleus or you can run it separately, connecting with a shared nucleus.

NATOS is fully reentrant and can run above the 16 MB line. Multiple Natural sessions can be started in parallel within one batch region; see Subtasking Session Support for Batch Environments.

Natural OS/390 Generation Parameters

The NTOS macro contains several generation parameters to change Natural for OS/390 batch interface's internal defaults.

These parameters are: ABEXIT | FACOM | LBPNAME | LE370 | SUBPOOL | USERID

ABEXIT - Abend Processing

This parameter specifies the mode of abend processing within Natural.

ABEXIT=ESTAE	Natural intercepts all abends and issues the appropriate error messages. This is the default value.
ABEXIT=SPIE	Only program checks (S0Cx abends) are intercepted as they used to be with Natural Version 2.1.
ABEXIT=NONE	Natural does not intercept any abends or program checks at all. This value corresponds to profile parameter DU=FORCE.

FACOM - Use of FACOM Operating System

This parameter specifies whether the FACOM operating system is to be used.

FACOM=NO	FACOM is not used. This is the default value.
FACOM=YES	FACOM is to be used. Specific code is generated to support FACOM.

LBPNAME - Sharing of Local Buffer Pools

This parameter controls the sharing of the local buffer pools. It defines the name of the shared buffer pool environment and is used to locate and synchronize the local buffer pools.

LBPNAME=name	<i>name</i> can be 1-8 characters long.
LBPNAME=	The default value is none, that is, the local buffer pools are not shared.

When running multiple Natural sessions under OS/390 in a batch or TSO environment concurrently, for example, when running a Natural RPC server, each session allocates storage for separate local buffer pools. Except for the Natural OS/390 batch server, the local buffer pools are not shared per default, that is, if the different sessions use the same Natural objects, these have to be loaded once for each session separately. If *name* is specified, all local buffer pools will be shared by the different Natural sessions.

LE370 - Use of IBM Language Environment

This parameter specifies whether Natural is to run in the IBM Language Environment (LE).

LE370=YES	You can call external subprograms according to the IBM calling conventions.
LE370=NO	You can only call main programs of the Language Environment. This is the default value. This means a new LE enclave is created and terminated for each CALL statement.
LE370=POSIX	You can call external subprograms according to the LE calling conventions with POSIX semantics, i.e. LE is initialized with runtime option POSIX(ON).

For more information about Natural running with the IBM Language Environment, refer to Miscellaneous > LE Subprograms (in the Natural Operations Manual).

SUBPOOL - Storage Subpool for GETMAIN Requests

This parameter defines the storage subpool for GETMAIN requests.

SUBPOOL=nnn	Possible value for <i>nnn</i> : 0 to 127. The default value is 0.
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USERID - Content of System Variable *INIT-USER

This parameter specifies the content of the system variable *INIT-USER.

USERID=YES	The variable is set to either the user ID from the security access control block (ACEE) if a security package (as RACF or ACF2) is involved or the user parameter from the job card.
USERID=NO	The user ID is the job name. This is the default value.

The content of *INIT-USER can be changed by the user ID exit NATUEX1 during session initialization. For more information, see Natural User Exits > NATUEX1 - User Exit for Authorization Control.

Datasets Used by Natural under OS/390 Batch

The following datasets are required if certain functions are used during a Natural OS/390 batch session:

CMEDIT	Software AG Editor Work File
CMHCOPY	Hardcopy Print Output
CMOBJIN	Input for Natural INPUT Statements
CMPLG	Dynamic Profile Parameter Report Output
CMPRINT	Primary Report Output
CMPRMIN	Dynamic Profile Parameter Input
CMPTnn	Additional Reports 01-31
CMSYNIN	Primary Command Input
CMTRACE	External Trace Output
NATRJE	Job Submit Output
STEPLIB	Load Library for External Modules
CMWKFnn	Work Files 01-32

These datasets are described below.

Unless otherwise stated below, the default DCB RECFM/LRECL information is as follows:

- RECFM=FB and LRECL=80 for sequential input datasets
- RECFM=FBA and LRECL=133 for sequential output datasets

CMEDIT - Software AG Editor Work File

The Software AG Editor work file VSAM dataset is required if a local or global Software AG editor buffer pool is to be used.

If not defined in the JCL, the name of the Editor work file specified by subparameter DSNAME of profile parameter EDBP or parameter macro NTEDBP is used by Natural to do the dynamic allocation for the Editor work file.

Alternatively, profile parameter EDPSIZE can be used to run with an auxiliary editor buffer pool, which doesn't require an editor work file. For more information about the installation of the Software AG editor, please refer to Installing the Software AG Editor (in the Natural Installation for Mainframes documentation).

CMHCOPY - Optional Report Output for Hardcopy

The default name of the hardcopy print output dataset is CMHCOPY. It can be changed by one of the following:

- the subparameter DEST of profile parameter PRINT for Print File 0,
- the profile parameter HCDEST, which is an equivalent of PRINT=((0) , DEST= . . .) ,
- the setting of the system variable *HARDCOPY during the session,
- the terminal command %H during the session.

The subparameters of the profile parameter PRINT for Print File 0 can be used to change the default values for the hardcopy dataset. The default dataset name CMHCOPY implies CLOSE=FIN for the hardcopy print dataset, that is, after the dataset has been opened for output, any subsequent change of the hardcopy print output dataset name will not be honored. If a different name is defined at open time, the hardcopy dataset will be closed according to subparameter CLOSE of profile parameter PRINT for Print File 0.

During the session, the hardcopy dataset can be released and reallocated (before open or after close) by the by dynamic allocation (see Natural Application Programming Interface USR2021).

CMOBJIN - Input for Natural INPUT Statements

This dataset can be used to read data by the Natural INPUT statement rather than from the primary input dataset CMSYNIN.

The usage of CMOBJIN is controlled by the profile parameter OBJIN. The input record data length for Natural is determined by profile parameter SL. The maximum record length (LRECL) supported is 255. The record format (RECFM) can be fixed or variable.

CMPLOG - Dynamic Profile Parameter Report Output

If profile parameter PLOG=ON is set and dataset CMPLOG is available, the evaluated dynamic profile parameters are written to this dataset during session initialization. If dataset CMPLOG is not available, the evaluated dynamic profile parameters are written to CMPRINT.

CMPRINT - Primary Report Output

CMPRINT is used for the primary output report resulting from DISPLAY, PRINT and WRITE statements in a Natural program.

If not defined in JCL, CMPRINT will be allocated dynamically as

```
//CMPRINT DD SYSOUT=*
```

when the first record is to be written.

CMPRMIN - Dynamic Parameter Dataset

If available, this dataset is read during session initialization to get dynamic profile parameters. Only the first 72 positions of each record are used to build a dynamic profile parameter string.

Any other profile parameters, which are passed directly for the start of the Natural nucleus by the PARM keyword of the JCL EXEC statement, are concatenated at the end of the parameter string which is built from the input of CMPRMIN, that is, these can be used to overwrite the parameters from CMPRMIN.

CMPRTnn - Additional Reports 01 - 31

These datasets can be used by Natural print file statements like WRITE (nn). If no DCB information (e.g. RECFM, LRECL, BLKSIZE) is available, the defaults are defined by the PRINT profile parameter or the NTPRINT macro in the Natural parameter module. The print file names can be overwritten by subparameter DEST.

CMSYNIN - Primary Input

This dataset is used to read command input and data requested by the Natural INPUT statement. The latter is controlled by the profile parameter OBJIN (see also CMOBJIN).

The input record data length for Natural is determined by profile parameter SL. The maximum record length (LRECL) supported is 255. The record format (RECFM) can be fixed or variable.

CMTRACE - Optional Report Output for Natural Tracing

If profile parameter ETRACE=ON is set or the equivalent terminal command %TRE+ was issued, any Natural trace output during the session is written to the CMTRACE dataset. To define the Natural components that are to be traced, the profile parameter TRACE is required.

If dataset CMTRACE is not available, it will be allocated dynamically as

```
//CMTRACE DD SYSOUT=*
```

when the first trace record is to be written.

NATRJE - Job Submit Output

This dataset is used for the Natural job submitting utility. If it is not defined, it will be allocated dynamically as

```
//NATRJE DD SYSOUT=(A,INTRDR)
```

when the first job is submitted.

STEPLIB - Load Library for External Modules

STEPLIB is the default load library name for loading external modules, for example:

- the shared nucleus (profile parameter NUCNAME),
- a separate Adabas link routine module (profile parameter ADANAME),
- the session back-end program (profile parameter PROGRAM),
- any external subprograms not linked to the Natural parameter module.

The load library name can be changed by profile parameter LIBNAM. The specified load library name must be defined by a DD statement in the JCL.

CMWKFn - Work Files 01-32

These datasets can be used by Natural work file statements like READ WORK *nn* and WRITE WORK *nn*.

If no DCB information (RECFM, LRECL, BLKSIZE, etc.) is available in the JCL or in the VTOC entry for the dataset, the defaults are defined by the WORK profile parameter or the NETWORK macro in the Natural parameter module.

The work file dataset names can be overwritten by subparameter DEST.